

REMARKS

Independent Claims 1 and 17 stand rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,446,005 (“Bingeman”). This rejection is respectfully traversed. Claims 1 and 17 require the steps of “determining a new size of the wheel based on the distance traveled and wheel rotation information.” This step is neither taught nor suggested by Bingeman. The Office Action does not state where this step is taught. Rather, the Office Action states that Bingeman teaches “calculating a correction factor based on the positioning system distance and the wheel sensor distance,” citing Bingeman at 17:1-5. Office Action at 2. However, the cited portion of Bingeman mentions nothing about determining a wheel size. Rather, the cited portion of Bingeman discusses the use of a “wheel scale factor error correction” “to compensate an error that increases with distance traveled over time.” First, a wheel scale factor is not the same thing as a size of a wheel. Applicants further note that Bingeman does not actually calculate a wheel scale factor, but rather an estimate of the error in a wheel scale factor. The passage cited by the examiner states that the wheel scale factor error correction is provided by the DGPS/DR calibration. Bingeman further clarifies that the “Kalman filter estimates error in the wheel scale factor in contrast to estimating the wheel scale factor itself” in the passage at 17:67-18:2. Thus, what Bingeman teaches is the calculation of a wheel scale factor error, and not the calculation of wheel size as recited in Claims 1 and 17. Withdrawal of the rejection of independent Claims 1 and 17 is respectfully requested. Additionally, withdrawal of the rejections of Claims 2-16 and 18-33, which depend from Claims 1 and 17, respectively, is also requested as these claims contain patentable subject matter for at least the reasons discussed above with respect to Claims 1 and 17.

Independent Claims 34 and 50 stand rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,446,005 (“Bingeman”). This rejection is respectfully traversed. Claims 34

and 50 have been amended to recite that “the control unit is further configured to ignore wheel rotations distance and positioning system distance when a speed of the train is below a threshold.” This limitation, which originally appeared in Claims 39 and 55, is neither taught nor suggested by Bingeman. The office action rejected Claims 39 and 55 as obvious over Bingeman. The portion of the office action at page 5 directed toward those claims refers to a passage of Bingeman at 10:29-34 and states that a reference is used to determine speeds and concludes that modifying Bingeman to arrive at the invention recited in Claims 39 and 55 would have been obvious because “obtained distance data in this range would make the calculation for a correction coefficient not ‘in normal operation status.’” There are several problems with this argument.

First, the Office Action does not indicate the source for the internal quotation to “in normal operation status.” Therefore, it is unknown why the Examiner asserts that speeds below a threshold are not “in normal operation status.”

Second, the passage at 10:29-34 of Bingeman simply states that “the [wheel] sensor enables measurement of distance by reference to the number of rotations of the wheel from the starting point.” There is simply nothing in this passage that discloses or suggests the use of any speed threshold for taking such distance measurements.

Third, Applicants do not believe there is any motivation to modify Bingeman’s system to discard distance information at low speeds. For safety reasons, golf carts almost always include regulators that prevent them from being driven at high speeds. Therefore, low speeds are the “normal operation status” for golf carts and it would make little sense to discard distance data obtained at low speeds. Applicants further note that the rationale for ignoring data corresponding to low speeds in the context of a train (as recited in Claims 34 and 50) is explained at page 7, lines 7-16 of the specification: because locomotive typically use electric induction motors which have higher torque at low speeds, wheel slippage on trains tends to occur at low speeds when the

engine is attempting to accelerate. Applicants' representative respectfully notes that, in his personal experience, golf carts typically do not have high torque engines and therefore do not have slippage problems during acceleration from low speeds. Moreover, the sensor in Bingeman is mounted on the front wheel of the golf cart. Bingeman, 10:64-11:12. It is well known that golf carts are typically rear wheel drive vehicles. Therefore, any slippage during acceleration would be slippage in the rear wheels, which would not be measured by a sensor mounted on the front wheel. Thus, Applicants respectfully submit that one of ordinary skill in the art would not be motivated to make the modification to Bingeman suggested by the office action. Accordingly, withdrawal of the rejection of Claims 34 and 50 is respectfully requested. Dependent Claims 35-49 and 51-65, which depend from Claims 34 and 50, respectively, define patentable subject matter for at least the reasons discussed above in connection with Claims 34 and 50 and therefore withdrawal of the rejections of these claims is also respectfully requested.

Applicants also respectfully submit that other claims also define patentable subject matter for reasons in addition to those discussed above. For example, Claims 7 and 8 are directed toward train systems that include a map database having information about upcoming sections of track and require ignoring wheel rotation data when upcoming sections of track have curvatures and grades above a threshold. The office action rejects Claims 7 and 8 as being obvious over Bingeman in view of U.S. Patent No. 6,381,656 ("Satoh"). This rejection is respectfully traversed. While it is true that Satoh's system employs a map database that includes information related to roads, neither Satoh nor Bingeman disclose or suggest ignoring wheel rotation information when curves or grades are above a threshold. The Office Action again refers to distance data in this range making the calculation for a correction coefficient not "in normal operation status" without any explanation of why this would be so. Moreover, it is unclear why one would include information about roads in a golf cart application. While one could assert that

the equivalent of roads in the context of a golf cart application is cart paths, applicants respectfully note that it is common for golf carts to be driven off cart paths to get to the location where a golfer's shot lies. Golf carts are not like trains (which never go off the tracks except in derailment situations, which are hardly normal) or like the vehicles in Satoh which are "primarily moveable over roads." Satoh, 1:31. Accordingly, Claims 7 and 8 also define patentable subject matter.

In light of the above, Applicants submit that this application is now in condition for allowance and therefore request favorable consideration. If any issues remain which the Examiner feels may be best resolved through a personal or telephonic interview, the Examiner is respectfully requested to contact Applicants counsel, James M. Heintz at (202) 861-4167.

Respectfully submitted,

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